#5

SEQUENCE LISTING

<110> Fouser, Lynette
Liu, Wei
Deng, Bijia

<120> TYPE 2 CYTOKINE RECEPTOR AND NUCLEIC ACIDS ENCODING SAME

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Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln

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Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                 85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
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Glu Arg Cys Val Glu Ile Pro
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accagtgaaa cctcagacat acaggaacct tattacggga gggtgagggc ggcctcggct 420
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gatcctccag tcatgaatat aacccaagtc aatggctctt tgttggtaat tctccatgct 540

ccaaatttac catatagata ccaaaaggaa aaaaatgtat ctatagaaga ttactatgaa 600
ctactatacc gagtttttat aattaacaat tcactagaaa aggagcaaaa ggtttatgaa 660
ggggctcaca gagcggttga aattgaagct ctaacaccac actccagcta ctgtgtagtg 720
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Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
             20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Met Phe Ser Cys Ser Met Lys Ser Ser His Gln Lys Pro Ser
 65                  70                  75                  80

Gly Cys Trp Gln His Ile Ser Cys Asn Phe Pro Gly Cys Arg Thr Leu
                 85                  90                  95

Ala Lys Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
            100                 105                 110

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
        115                 120                 125

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
    130                 135                 140

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
145                 150                 155                 160

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
                165                 170                 175

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
            180                 185                 190

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
        195                 200                 205

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
    210                 215                 220

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
225                 230                 235                 240
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Glu Arg Cys Val Glu Ile Pro
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tttgtgcagt acaaaatata tggacagaga caatggaaaa ataaagaaga ctgttggggt 240
actcaagaac tctcttgtga ccttaccagt gaaacctcag acatacagga accttattac 300
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actccctggt gggaaagagc aaaaggttta tga 393

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<211> 130
<212> PRT
<213> human

<400> 6
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Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
20 25 30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
35 40 45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
50 55 60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
65 70 75 80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
85 90 95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
100 105 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Arg Ala Lys
115 120 125

Gly Leu
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

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<210> 8
<211> 341
<212> PRT
<213> human

<400> 8
Met Ala Ala Ala Leu Arg Gly Ala Leu Trp Gly Cys Leu Leu Leu Cys
1 5 10 15

Val Ser Gly Ile Val Pro Lys Pro Arg Asn Ala Arg Ile Ser Ser Val
20 25 30

Asn Phe Arg Ser Val Leu Leu Trp Asp Pro Pro Gly Val Arg Lys Gly
35 40 45

Asn Leu Ser Tyr Thr Val Gln Ala Lys Ser Ile Phe Pro Lys Gln Asn
50 55 60

Phe Asn Asn Val Thr Thr Asn Leu Asn Val Thr Glu Cys Asp Val Ser
65 70 75 80

Ser Leu Ser Val Tyr Gly Ala Tyr Val Leu Arg Val Arg Thr Glu Trp
85 90 95

Glu Asp Glu His Ser Asp Trp Ala Val Val Arg Phe Lys Pro Met Ala
100 105 110

Asp Thr Val Ile Gly Pro Pro Ser Val Asn Val Lys Ser Glu Ser Gly
115 120 125

Thr Leu His Val Asp Phe Thr Gly Pro Ala Ala Asp Arg Glu His Asp
130 135 140

Lys Trp Ser Leu Lys Gln Tyr Tyr Gly Ser Trp Ile Tyr Arg Ile Leu
145 150 155 160

Tyr Trp Lys Lys Gly Ser Asn Lys Lys Val Ile His Ile Asp Thr Lys
165 170 175

His Asn Ser Glu Ile Leu Ser Gln Leu Glu Pro Trp Thr Ile Tyr Cys
180 185 190

Ile Gln Val Gln Gly Val Ile Pro Glu Trp Asn Lys Thr Gly Glu Arg
195 200 205

Ser Gln Glu Leu Cys Glu Gln Thr Thr His Asn Gly Val Thr Pro Val
210 215 220

Trp Ile Val Val Thr Val Leu Leu Gly Ser Met Leu Ala Val Ile Ile
225 230 235 240

Ser Val Pro Val Cys Phe Phe Ala Phe Trp Tyr Leu Tyr Arg Phe Thr
245 250 255

Lys His Val Phe Phe Pro Ser Tyr Ile Phe Pro Gln His Leu Lys Glu
260 265 270

Phe Phe Ser Pro Val Pro Gln Glu Glu His His Phe His Asp Trp Leu
275 280 285

Thr Val Ile Ser Glu Glu Pro Lys Ser Gln Arg Asp Glu Thr Val Glu
290 295 300

Glu Ala Ser Arg Thr Ala Glu His His Gln Asp Ser Lys Gln Glu Ile
305 310 315 320

Ser Asp Ser Glu Ile Leu Pro Pro Leu Glu Arg Asp Gln Thr Leu Leu
325 330 335

Thr Leu Gln Ser Gly
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<210> 9
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

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<210> 10
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

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cgccccagaa ggtccgattt cagtccagaa atttccacaa tattttgcac tggcaagcag 180
ggagctctct ccccagcaac aacagcatct actttgtgca gtacaagatg tatggacaga 240
gccaatggga agataaagtt gactgctggg ggaccacggc gctcttctgt gacctgacca 300
atgaaacctt agacccatac gagctgtatt acgggagggt gatgacggcc tgtgctggac 360
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ctccggtcgt gactataacc cgagttaacg catctttgcg ggtgcttctc cgtcctccag 480
agttgccaaa tagaaaccaa agtggaaaaa atgcatccat ggaaacttac tacggcttag 540
tatacagagt tttcacaatc aacaattcac tagagaagga gcaaaaagcc tatgaaggga 600
ctcagagagc tgttgaaatt gaaggtctga tacctcattc cagctactgc gtagtggctg 660
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<212> PRT
<213> human

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Met Met Pro Lys His Cys Leu Leu Gly Leu Leu Ile Ile Leu Leu Ser
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Val Arg Phe Gln Ser Arg Asn Phe His Asn Ile Leu His Trp Gln Ala
35 40 45

Gly Ser Ser Leu Pro Ser Asn Asn Ser Ile Tyr Phe Val Gln Tyr Lys
50 55 60

Met Tyr Gly Gln Ser Gln Trp Glu Asp Lys Val Asp Cys Trp Gly Thr
65 70 75 80

Thr Ala Leu Phe Cys Asp Leu Thr Asn Glu Thr Leu Asp Pro Tyr Glu
85 90 95

Leu Tyr Tyr Gly Arg Val Met Thr Ala Cys Ala Gly Arg His Ser Ala
100 105 110

Trp Thr Arg Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Leu Asp
115 120 125

Pro Pro Val Val Thr Ile Thr Arg Val Asn Ala Ser Leu Arg Val Leu
130 135 140

Leu Arg Pro Pro Glu Leu Pro Asn Arg Asn Gln Ser Gly Lys Asn Ala
145 150 155 160

Ser Met Glu Thr Tyr Tyr Gly Leu Val Tyr Arg Val Phe Thr Ile Asn
165 170 175

Asn Ser Leu Glu Lys Glu Gln Lys Ala Tyr Glu Gly Thr Gln Arg Ala
180 185 190

Val Glu Ile Glu Gly Leu Ile Pro His Ser Ser Tyr Cys Val Val Ala
195 200 205

Glu Met Tyr Gln Pro Met Phe Asp Arg Arg Ser Pro Arg Ser Lys Glu
210 215 220

Arg Cys Val Gln Ile Pro
225 230

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<213> human

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<223> Wherein X is the amino acid L or F

<220>
<221> VARIANT
<222> (10)
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<212> PRT
<213> human

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<222> (14)
<223> Wherein X is the amino acid A or P

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<212> PRT
<213> human

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<221> VARIANT
<222> (2)
<223> Wherein X is the amino acid I or V

<220>
<221> VARIANT
<222> (9)
<223> Wherein X is the amino acid M or I

<220>
<221> VARIANT
<222> (13)
<223> Wherein X is the amino acid S or R

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1 5 10 15

<210> 16
<211> 16
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<213> human

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1 5 10 15

<210> 17
<211> 21
<212> PRT
<213> human

<220>
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<222> (2)
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<220>
<221> VARIANT
<222> (7)
<223> Wherein X is the amono acid T or I

<220>
<221> VARIANT
<222> (18)
<223> Wherein X is the amino acid A or V

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Lys Xaa Tyr Glu Gly
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<213> human

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<223> Wherein X is the amino acid G or A

<220>
<221> VARIANT
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<223> Wherein X is the amino acid I or T

<220>
<221> VARIANT
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<223> Wherein X is the amino acid M or I

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Val Ala Glu Xaa Tyr Gln Pro Met
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<210> 19
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<213> human

<220>
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<220>
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<222> (13)
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<210> 20
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<213> human

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20 25 30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
35 40 45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
50 55 60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
65 70 75 80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
85 90 95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
100 105 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
115 120 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
130 135 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145 150 155 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
165 170 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
180 185 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
195 200 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
210 215 220

Glu Arg Cys Val Glu Ile Pro
225 230

<210> 21
<211> 231
<212> PRT
<213> human

<400> 21
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
1 5 10 15

Thr Gly Val Ala Gly Thr Gln Ser Thr Arg Glu Ser Leu Lys Pro Gln
20 25 30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
35 40 45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
50 55 60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
65 70 75 80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
85 90 95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
100 105 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
115 120 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
130 135 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145 150 155 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
165 170 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
180 185 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
195 200 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
210 215 220

Glu Arg Cys Val Glu Ile Pro
225 230

<210> 22
<211> 231
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<400> 22
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
1 5 10 15

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Thr Gly Val Ala Gly Thr Gln Ser Thr His Asp Ser Leu Lys Pro Gln
            20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
        35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
    50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230


<210> 23
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<400> 23
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
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Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Val Lys Pro Gln
            20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
        35                  40                  45
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Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                 85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230


<210> 24
<211> 231
<212> PRT
<213> human

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Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
  1               5                  10                  15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu His Pro Gln
             20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
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 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                 85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230
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<210> 25
<211> 231
<212> PRT
<213> human

<400> 25

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Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
  1               5                  10                  15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
             20                  25                  30

Lys Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                 85                  90                  95
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Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230
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<210> 26
<211> 231
<212> PRT
<213> human

<400> 26

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Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
  1               5                  10                  15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
             20                  25                  30

Arg Val Gln Phe Gln Ser Arg Gln Phe His Asn Ile Leu Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                 85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
             100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
         115                 120                 125
```

```
Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230


<210> 27
<211> 231
<212> PRT
<213> human

<400> 27
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
  1               5                  10                  15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
             20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Val Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
```

```
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230


<210> 28
<211> 231
<212> PRT
<213> human

<400> 28
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
  1               5                  10                  15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
            20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
        35                  40                  45

Pro Gly Arg Leu Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
    50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175
```

```
Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230
```

<210> 29
<211> 231
<212> PRT
<213> human

<400> 29

```
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
  1               5                  10                  15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
             20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Ala Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                 85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205
```

```
Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
225                 230


<210> 30
<211> 231
<212> PRT
<213> human

<400> 30
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
  1               5                  10                  15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
             20                  25                  30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
         35                  40                  45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Ile Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
 65                  70                  75                  80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
                 85                  90                  95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
            100                 105                 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
        115                 120                 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
    130                 135                 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145                 150                 155                 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
            180                 185                 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
        195                 200                 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu
    210                 215                 220

Glu Arg Cys Val Glu Ile Pro
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225 230

<210> 31
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 31
gaattcgtcg acccaccatg cctaagcatt gccttc 36

<210> 32
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 32
tggaatctgc acacatctct cc 22

<210> 33
<211> 199
<212> PRT
<213> human

<400> 33
Lys Pro Gln Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu
1 5 10 15

Gln Trp Gln Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe
20 25 30

Val Gln Tyr Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp
35 40 45

Cys Trp Gly Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser
50 55 60

Asp Ile Gln Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly
65 70 75 80

Ser Tyr Ser Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu
85 90 95

Thr Lys Ile Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser
100 105 110

Leu Leu Val Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys
115 120 125

```
Glu Lys Asn Val Ser Ile Glu Asp Tyr Tyr Xaa Glu Leu Leu Tyr Arg
    130                 135                 140

Val Phe Ile Ile Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu
145                 150                 155                 160

Gly Ala His Arg Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser
                165                 170                 175

Tyr Cys Val Val Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser
            180                 185                 190

Gln Arg Ser Glu Glu Arg Cys
        195
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<210> 34
<211> 231
<212> PRT
<213> human

<400> 34

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Ser Met Met Pro Lys His Cys Leu Leu Gly Leu Leu Ile Ile Leu Leu
  1               5                  10                  15

Ser Ser Ala Thr Glu Ile Gln Pro Ala Arg Val Ser Leu Thr Pro Gln
             20                  25                  30

Lys Val Arg Phe Gln Ser Arg Asn Phe His Asn Ile Leu His Trp Gln
         35                  40                  45

Ala Gly Ser Ser Leu Pro Ser Asn Asn Ser Ile Tyr Phe Val Gln Tyr
     50                  55                  60

Lys Met Tyr Gly Gln Ser Gln Trp Glu Asp Lys Val Asp Cys Trp Gly
 65                  70                  75                  80

Thr Thr Ala Leu Phe Cys Asp Leu Thr Asn Glu Thr Leu Asp Pro Tyr
                 85                  90                  95

Glu Leu Tyr Tyr Gly Arg Val Met Thr Ala Cys Ala Gly Arg His Ser
            100                 105                 110

Ala Trp Thr Arg Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Leu
        115                 120                 125

Asp Pro Pro Val Val Thr Ile Thr Arg Val Asn Ala Ser Leu Arg Val
    130                 135                 140

Leu Leu Arg Pro Pro Glu Leu Pro Asn Arg Asn Gln Ser Gly Lys Asn
145                 150                 155                 160

Ala Ser Met Glu Thr Tyr Tyr Gly Leu Val Tyr Arg Val Phe Thr Ile
                165                 170                 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Ala Tyr Glu Gly Thr Gln Arg
            180                 185                 190
```

Ala Val Glu Ile Glu Gly Leu Ile Pro His Ser Ser Tyr Cys Val Val
195 200 205

Ala Glu Met Tyr Gln Pro Met Phe Asp Arg Arg Ser Pro Arg Ser Lys
210 215 220

Glu Arg Cys Val Gln Ile Pro
225 230

<210> 35
<211> 231
<212> PRT
<213> human

<400> 35
Met Met Pro Lys His Cys Phe Leu Gly Phe Leu Ile Ser Phe Phe Leu
1 5 10 15

Thr Gly Val Ala Gly Thr Gln Ser Thr His Glu Ser Leu Lys Pro Gln
20 25 30

Arg Val Gln Phe Gln Ser Arg Asn Phe His Asn Ile Leu Gln Trp Gln
35 40 45

Pro Gly Arg Ala Leu Thr Gly Asn Ser Ser Val Tyr Phe Val Gln Tyr
50 55 60

Lys Ile Tyr Gly Gln Arg Gln Trp Lys Asn Lys Glu Asp Cys Trp Gly
65 70 75 80

Thr Gln Glu Leu Ser Cys Asp Leu Thr Ser Glu Thr Ser Asp Ile Gln
85 90 95

Glu Pro Tyr Tyr Gly Arg Val Arg Ala Ala Ser Ala Gly Ser Tyr Ser
100 105 110

Glu Trp Ser Met Thr Pro Arg Phe Thr Pro Trp Trp Glu Thr Lys Ile
115 120 125

Asp Pro Pro Val Met Asn Ile Thr Gln Val Asn Gly Ser Leu Leu Val
130 135 140

Ile Leu His Ala Pro Asn Leu Pro Tyr Arg Tyr Gln Lys Glu Lys Asn
145 150 155 160

Val Ser Ile Glu Asp Tyr Tyr Glu Leu Leu Tyr Arg Val Phe Ile Ile
165 170 175

Asn Asn Ser Leu Glu Lys Glu Gln Lys Val Tyr Glu Gly Ala His Arg
180 185 190

Ala Val Glu Ile Glu Ala Leu Thr Pro His Ser Ser Tyr Cys Val Val
195 200 205

Ala Glu Ile Tyr Gln Pro Met Leu Asp Arg Arg Ser Gln Arg Ser Glu

210 215 220

Glu Arg Cys Val Glu Ile Pro
225 230

<210> 36
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 36
cttgcaacca tgatgcctaa acattgc 27

<210> 37
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 37
atgatgccta aacattgctt tctagg 26

<210> 38
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 38
ggaactctgg ttgccagaca agcacac 27

<210> 39
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR Primer

<400> 39
caaggagaga tgtgtgcaga ttccatga 28